

USSR

DEGTYAREVA, A. S., et al., *Khimiya v Sel'skom Khozyaystve*, no 11, Nov 70, pp 23-25

Sevin, a highly effective compound against Lepidoptera caterpillars was used as the standard control compound. Of all tested compounds against the apple worm, phosalone, cidal, metaphos, sevin, Cardona, 8-9491, cyanon, phthalophos and imidan were found to be most effective. Trichloronectabias, troien, methylnitrophos and metathion failed to provide adequate protection against this pest. LD50 values of all tested compounds are specified. Effectiveness per concentration and duration of effect in various concentrations are cited in tabular form.

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1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--SOME PECULIARITIES OF ECOLOGY OF CARPOCAPSA POMONELLA L. WINTERING  
IN SOIL -U-  
AUTHOR-(02)-RUDNEV, D.F., GRODSKIY, V.A.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK ZOOLOGII, 1970, NR 3, PP 42-46

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INSECTA, HIBERNATION, GEOGRAPHIC LOCATION, ECOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1135

STEP NO--UR/0575/70/000/003/0042/0046

CIRC ACCESSION NO--AP0130164

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70  
CIRC ACCESSION NO--AP0130164  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERE ARE CONTRADICTORY DATA IN  
THE PROBLEM OF CARPOCAPSA POMONELLA L. CATERPILLAR PLACE OF PUPATION AND  
WINTERING. AS A RESULT OF INVESTIGATIONS, CARRIED OUT IN 1964-1965 IN  
THE GARDENS OF ZAPOROZHIE REGION OF THE UKRAINE, IT WAS ESTABLISHED THAT  
IN THE STEPPE ZONE OF THE UKRAINE CATERPILLARS HIBERNATE NOT ONLY ON THE  
TREES BUT ALSO IN SOIL (27-36PERCENT), BOTH IN CULTIVATED AND  
UNCULTIVATED ONE; THE MAIN QUANTITY OF CATERPILLARS IN SOIL  
(43-57PERCENT) ARE ARRANGED NEAR THE ROOT COLLAR, 26-29PERCENT OF  
CATERPILLARS AT A DISTANCE UP TO 0.5 M FORM THE TRUNK. COCOONS LIE IN  
THE SOILS AT THE DEPTH OF 1-5CM; THE DEATH RATE OF CATERPILLARS,  
WINTERING ON TREES, FROM ENTOMOPHAGES AND UNFAVOURABLE CONDITIONS  
REACHES 35PERCENT WHEREAS IN SOIL THE CATERPILLARS ARE ALMOST COMPLETELY  
PRESERVED. SO, SOIL IS A VERY FAVOURABLE PLACE FOR WINTERING OF  
COTERPILLARS OF CARPOCAPSA POMONELLA L. FACILITY: INSTITUTE OF  
PLANT PROTECTION, KIEV.

UNCLASSIFIED

USSR

UDC: 550.054

LEV, I. S., GRODZERSKIY, V. A., VISHNYAKOV, Ye. P., KUNAREV, A. A., DUNA-  
YEVA, L. P., All-Union Scientific Research Institute of Geophysical Methods  
of Prospecting

"A Statistical Seismic Signal Analyzer"

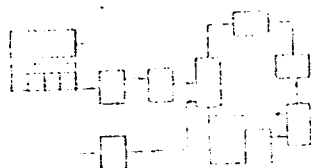
Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzy, Tovarnyye Znaki,  
No 11, Apr 72, Author's Certificate No 333509, Division G, filed 20Aug70,  
published 21Mar72, p 183

Translation: This Author's Certificate introduces a statistical seismic  
signal analyzer which contains a magnetic drum, playback heads, a trigger  
module, amplifiers and hysteresis oscillators. As a distinguishing feature of  
the patent, the effectiveness of processing seismic data is improved by  
adding a program control unit connected to a trip number counter and a  
channel commutator. The commutator output is connected to the same counter  
which is connected in turn to a memory device. A code pulse shaper circuit  
is connected between the channel commutator and the memory device.

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LEV, I. S. et al., USSR Author's Certificate No 333509



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USSR

UDC 581.1.03/577.3+539.16.04

GOLIKOVA, O. P., and GRODZINSKIY, Institute of Plant Physiology, Academy of Sciences UKSSR, Kiev

"Injury to the DNA Matrix and Radiation Lesion of Plants"

Moscow, Doklady Akademii Nauk SSSR, No 5, 1971, pp 1,207-1,210

Abstract: The results of experiments involving the irradiation of pea shoots (5 to 25 kr) suggests that such irradiation impairs the transmission of genetic information at the level of transcription. The impairment consists both of direct injury to the DNA matrix and of rupture of the DNA-protein bond. The processes associated with gene repression and derepression are more sensitive than the DNA matrix proper. After irradiation, at 5 kr, the percent of hybridization of RNA from nonirradiated roots on a DNA matrix from both irradiated and nonirradiated roots is identical, showing that this dose does not cause extensive damage to the coding sequences and the the RNA synthesized on a nonirradiated DNA matrix finds complementary portions there. When RNA isolated from irradiated roots is used, its capacity for hybridization is lower than in the case of nonirradiated RNA, although the percent of hybridization on DNA from irradiated and nonirradiated roots is the same. Following irradiation at 25 kr, the percent of hybridization of RNA from irradiated shoots on DNA from nonirradiated

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USSR

GOLIKOVA, O. P., and GRODZINSKIY, Doklady Akademii Nauk SSSR, No 5, 1971,  
pp 1,207-1,210

roots is higher than that obtained with DNA from irradiated roots. But when irradiated RNA is hybridized, the percent of its hybridization on irradiated DNA is higher than on nonirradiated DNA. This shows that irradiation at 25 kr injures the DNA matrix directly. Consequently, the newly synthesized RNA on this matrix differs from the RNA synthesized on nonirradiated DNA.

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USSR

UDC 577.391

MAGONYE, I. G., Institute of Biology, Academy of Sciences, Latvian SSR, Riga, and GRODZINSKIY, D. M., Institute of Plant Physiology, Academy of Sciences, Ukrainian SSR, Kiev

"Absciscic Acid as a Modifier of Plant Radiation Damage"

Kiev, Fiziologiya i Biokhimiya Kul'turnykh Rasteniy, Vol 5, No 4, Jul-Aug 73, pp 427-430

Abstract: Since proliferation of meristems determines their radiosensitivity, it may be assumed that factors operating upon cell division may modify radiation effects. The duckweed (*Spirodela polyrrhiza* Schleid) was studied in reaction to radiation. The plant has two conditions: actively metabolizing (phylloclade) and rest (turion). Increase in radiation damage was noted in growing sprouts stimulated by kinetin. When absciscic acid was applied to the plants, a decrease in growth and a corresponding decrease in radiosensitivity resulted. Changes in the synthesis of nucleic acids and protein in plant development were considered. Synthesis of DNA and protein under the influence of absciscic acid was examined, using 2-C<sup>14</sup> thymidine and 2-C<sup>14</sup> glycine to determine intensity of synthesis of DNA and protein respectively. In both cases inclusion of the tracers was dependent upon the length of

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MAGONYE, I. G., and GRODZINSKIY, D. M., Fiziologiya i Biokhimiya  
Kul'turnykh Rasteniy, Vol 5, No 4, Jul-Aug 73, pp 427-430

action of abscisic acid. An increase of DNA synthesis 24 hours after application of abscisic acid may reflect an accumulation of S-phase cells with inhibition of growth processes of fully formed sprouts. Results indicate that regulators of growth processes should be further investigated for modification of radiation damage.

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USSR

UDC 581.1.03

GRODZINSKIY, D. M., Institute of Plant Physiology, Academy of Sciences  
Ukrainian SSR, Kiev

"Post-Radiation Recovery of Plants and Its Modification"

Kiev, Fiziologiya i Biokhimiya Kulturnykh Rasteniy, Vol 3, No 3, 1971, pp 314-323

Abstract: This review covers work done at the Department of Biophysics and Radiobiology of the author's Institute for the purpose of studying the mechanisms involved in the plant cell exposed to nuclear radiation and in the plant cell protected against the harmful effects of radiation. For this purpose, free radical states arising in plant seeds under the effect of gamma-radiation were studied by recording EPR spectra under various conditions of irradiation and of preservation in the post-radiation period. Bidzilya studied the recombination processes of free radical states as functions of temperature, humidity, and other factors. It was found that the measured yield curves of free radicals are nonlinear and are characterized by some saturation regions. The EPR spectra changed with increasing radiation dose: the signal becomes asymmetrical and is gradually split. In this way, EPR could be used to study the radicals

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GRODZINSKIY, D. M., Fiziologiya i Biokhimiya Kulturnykh Rasteniy, Vol 3,  
No 3, 1971, pp 314-323

produced by gamma-radiation. Following irradiation of seeds with natural paramagnetism, it was found that the level of paramagnetism was lowered, giving rise to the assumption that the free radicals combine with some of the natural paramagnetic centers. A modifying effect on the gamma-irradiated seeds by ultraviolet rays was found; the UV rays decrease the intensity of the spectrum of gamma-induced free radical states. Several basic mechanisms of plant recovery after irradiation are discussed: the molecular and biosynthetic mechanisms, as well as actual repair by special systems of nonconservative DNA synthesis. At the cellular level, recovery appears to be achieved by elimination of affected cells and acceleration of proliferative activity of unaffected or repaired cells. Recovery can be brought about also by materials modifying the radiation reaction of the plant. One of the most effective agents in connection with this is oxygen: when it is present in the medium, radiation damage to the organism is considerably reduced. Effective protection of plants from radiation is, in the opinion of the author, entirely possible.

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USSR

CHEBOTAR'OV, E. Yu., Doctor of Medical Sciences, GRODZINS'KIY, D. M., Doctor of Biological Sciences, BARABOI, V. A., Candidate of Medical Sciences, and KIRICHINS'KIY, B. R., Candidate of Legal Sciences

"Radiobiology in the Ukraine"

Kiev, Vestnik Akademii Nauk Ukrainskoy SSR, No 9, Sep 70, pp 40-50

Abstract: A survey is presented of the leading Ukrainian research institutes and the achievements of the major Ukrainian scientists. Ukrainian radiobiologists are conducting a wide variety of investigations on a high scientific and methodological level. Fundamental contributions are being made to such important problems as the biological effects of fast neutrons; mechanisms of radioprotection of animals and plants; repair of lesions caused by radiation; migration, incorporation, and effects of natural and artificial radioactive isotopes; and primary mechanisms of the injurious effects of ionizing radiation on biopolymers, mainly proteins. Extensive use is being made of radiospectroscopy, X-ray diffraction analysis, gas chromatography, and physicochemical studies of model systems.

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USSR

UDC 581.132

LUTSISHINA, YE. G. and GRCZINSKIY, D. M., Institute of Plant Physiology, Academy of Sciences USSR

"Application of Target Theory to the Study of Photosynthetically Active Chloroplast Units. II. Photoreduction of NADP"

Kiev, Tsitologiya i Genetika, No 1, 1970, pp 63-68

Abstract: In an earlier article, it was shown that target theory can be used to determine the configurations of the photosynthetically active centers responsible for photophosphorylation and Hill's reaction with ferricyanide. The method has been employed here to study the active center responsible for the photoreduction of NADP by isolated chloroplasts. Chloroplasts isolated from spinach leaves were lyophilized and exposed to gamma-rays, x-rays, neutrons, and alpha-particles in doses ranging from  $10^4$  -  $5 \cdot 10^5$  rad. After the chloroplasts were suspended in tris buffer HCl (pH 8), the rate of reduction of ferricyanide was determined. The dose dependence of the reaction was exponential in character and dependent on the type of radiation, but independent of the dose rate. The results were 1/2

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LUTSISHINA, YE. G., et al., Kiev, Tsitologiya i Genetika, No 1, 1970, pp 60-63

used to construct dose-effect curves, of value in assessing the photosynthetic units responsible for the photoreduction of NADP. The configuration parameters were as follows: complete sensitive volume -  $2.3 \cdot 10^9 \text{ \AA}^3$ ; molecular weight -  $1.7 \cdot 10^5$ ; target width -  $8 \text{ \AA}$ ; target length -  $3.7 \cdot 10^3 \text{ \AA}$ ; number of chlorophyll molecules - about 260.

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USSR

UDC: 581.17:377.3.001.57

G  
GRODZINSKY, D.M., Institute of Kinetics of Plant Cell Population"

Kiev, Ukrainskiy Botanicheskiy Zhurnal, Vol 27, No 2, Mar/Apr 70, pp 158-164

Abstract: The first principle of a mathematical model is based on the fact that the cell consists of two compartments -- a synthetic compartment drawing its nutrients from outside ( $s$ ) and the structural-genetic compartment ( $n$ )-- which draws its substance from  $s$  and contains the kinetic impulses. If the size of the cell is  $m$ , then  $m = s+n$ , and the development is  $\frac{dm}{dt} = \frac{ds}{dt} + \frac{dn}{dt}$ .

The rate of cell division is determined by the direct functional linkage of these two compartments. The second principle of the kinetic model is based on the two competing processes triggering dividing cells either to differentiation or to the mitotic cycle. The models based on the second principle are neuristic and make it possible to obtain equations of growth of plant axial organs as a result of the activity of apical meristem, represented as heterogeneous by its functions of the cell population. Two fundamental properties of the cell population follow from the suggested model -- the presence of a protective part of the population and a manifestation of the regulatory mechanisms in the functioning of the active and less active cells. These two characteristics are reflected in the model as parameters of population reliability reservation and the strength of the connection between the protective pull of the population and active cells division.

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USSR

UDC 621.357.8

GRODZINSKIY, E. YA., LOMONOSOV, L. I.

"Electrochemical Profile Grinding of a Hard-Alloy Cutting Tool"

V sb. Novoye v elektrofiz. i elektrokhim. obrabotke materialov (What's New in Electrophysical and Electrochemical Treatment of Materials -- collection of works), Leningrad, Mashinostroyeniye Press, 1972, pp 56-58 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L307)

Translation: The studies performed demonstrated that the electrochemical profile grinding of a hard alloy cutting tool by an AC graphite disc tool permits a surface roughness corresponding to class 8 to be obtained with an output rate of 20-25 mm<sup>3</sup>/min. The absence of microcracks and a variable surface layer on the product insures good operating characteristics of the hard alloy tool. The relative simplicity of the process, cheapness and absence of wear of the tool and the high quality of the products make this process economically advantageous and prospective.

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USSR

UDC 621.357:621.79.027

PROKLOVA, V. D., GRODZINSKIY, E. YA.

"Electrochemical Cutting of Complex-Shaped Parts by a Wire Electrode"

V sb. Novoye v elektrofiz. i elektrokhim. obrabotke materialov (What's New in Electrophysical and Electrochemical Treatment of Materials -- collection of works), Leningrad, Mashinostroyeniye Press, 1972, pp 50-52 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L306)

Translation: A technological process and an experimental machine tool have been developed which permit electrochemical intricately shaped cutting by a cylindrical electrode tool using a pattern. A brass wire 0.3-0.5 mm in diameter is used as the electrode tool to obtain narrow cuts; for a cut width greater than 1.5 mm, a rod electrode is used. The technical characteristics of the machine tool are presented.

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USSR

UDC 621.357.035.4:621.79.027(088.6)

GRODZINSKIY, E. YA., LOMONOSOV, L. I.

"Electrolyte for Electrochemical Machining of Hard Alloys"

USSR Author's Certificate No 313639, filed 10 Jan 69, published 18 Nov 71 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L312P)

Translation: An electrolyte has been patented for electrochemical machining of hard alloys with NaF as the activating substance. The electrolyte is distinguished by the fact that in order to increase the output capacity, additional Na carbonate is introduced into the electrolyte solution with the following ratio of components (in weight %):  $\text{Na}_2\text{CO}_3$  2-6, NaF to 1, the rest solvent.

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USSR

UDC: 531.55:521.1

GRODZOVSKIY, G. L., KIPORENKO, B. N.

"Investigating Control of the Weight of an Engine System by Using a Continuous Model"

Tr. pyatykh chteniy, posvyashch. razrabotke nauch. naslediya i razvitiyu idey K. E. Tsiolkovskogo, 1970. Sekts. "Mekh. kosmich. poleta" (Works of the Fifth Readings Dedicated to Elaborating the Scientific Legacy and Developing the Ideas of K. E. Tsiolkovskiy, 1970. "Space Flight Mechanics" Section), Moscow, 1971, pp 17-29 (from RZh-Mekhanika, No 5, May 72, Abstract No 5A50)

Translation: The paper deals with the problem of the maximum payload of a rocket when a given maneuver is executed. It is assumed that the weight of the engine system can be reduced by stages; this stage-by-stage weight reduction is accounted for by introducing additional parameters. Corresponding to the infinitely great values of these parameters are breaks in the continuity of the initial problem. It is also assumed that a transition to a continuous model is possible. The principle of the maximum is used in solving the variational problem of continuous type. Considerable

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USSR

GRODZOVSKIY, G. L., KIPORENKO, B. N., Tr. pyatykh chteniy, posvyashch. raz-  
rabotke nauch. naslediya i razvitiyu idey K. E. Tsiolkovskogo, 1970. Sekts.  
"Mekh. kosmich. poleta", Moscow, 1971, pp 17-29

attention is given to analysis of specific segments. A necessary condition for optimality of specific controls is found. Regions of existence of solutions containing specific segments are constructed for optimum problems corresponding to certain maneuvers. V. A. Troitskiy.

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USSR

UDC 629.78.015:533.6.011.5

GRODZOVSKIY, G. I., LASHKOV, YU. A., SVISHCHEV, G. P., and SOKOLOVA, I. P.

"Investigation of the Effect of Perforated Nozzles With Longitudinal Slots on the Resistance of a Body Rotating at Supersonic Velocities"

Uch. Zap. Tsentr. Aerogidrodinam In-ta (Scientific Writings of the Central Aerohydrodynamics Institute), Vol 3, No 2, 1972, pp 21-27 (from Referativnyy Zhurnal--Raketostroyeniye, No 8, 1972, Abstract No 8.41.92)

Abstract: Results of an investigation on the effect of rear, thin-wall perforated nozzles with a different number of longitudinal slots on the bottom resistance of a body rotating at Mach numbers of 1.75, 2.25 and 4.0 have been presented. It was shown that the use of thin-wall nozzles with longitudinal slot perforation gives a noted decrease of the total resistance of a rotating body at Mach 1.75-2.25. The change of total resistance of a rotating body agrees well in this instance with increased bottom pressure. Author's view, 9 illustrations, 5 bibliographical references.

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USSR

UDC 629.783.014.525(47)

BALAYEV, N. F., GRODZOVSKIY, G. I., DANILOV, Yu. I., ZAKHAROV, V. M.,  
KRAVTSEV, N. F., KUZ'MIN, R. N., MAROV, E. Ya., MOROZOV, P. M.,  
NIKITIN, V. Ye., PEROV, S. P., PETUNIN, A. N., UTKIN, V. M., and  
SHVIDKOVSKIY, Ye. G.

"Scientific Data on the Flight of Automatic Ionospheric "Yantar"  
Laboratories"

Uch. zap. Tsentr. Aerogidrodinam. in-ta (Scientific Notes of the  
Central Aerohydrodynamic Institute) 1971, Vol 2, No 2, pp 58-65  
(from Referativnyy Zhurnal, Raketostroyeniye, No 11, Nov 71,  
Abstract 11.41.87 Resume)

Abstract: Launches of automatic ionospheric "Yantar" laboratories  
with gaseous plasma-ionic engines up to 100-400 km altitudes were  
conducted with the aid of geophysical rockets, for the purpose of  
studying prospects of controlled flight, in upper layers of the  
atmosphere. Performance of gaseous plasma-ionic engines under iono-  
spheric conditions was studied. Parameters characterising the  
ion jet-ionospheric plasma interaction, as well as parameters of  
neutral atmosphere were measured. Scientific data on conducted ex-  
periments is presented. 8 figures, 1 table, 11 references.

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1/2 038 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--STUDY OF A SYSTEM OF RADIATING HEAT CONDUCTING ANNULAR RIBS -U-

AUTHOR-(02)-GRODZOVSKIY, G.L., PASICHNIK, Z.V.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK UKRAINS'KOI RSR, DOPOVIDI, SERIIA A FIZKO-TEKHNICHI  
I MATEMATICHNI NAUKI, VOL. 32, FEB. 1970, P. 147-152  
DATE PUBLISHED----FEB70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--RADIATIVE HEAT TRANSFER, SPHERIC SHELL STRUCTURE, BLACK BODY  
RADIATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1992/0909

STEP NO--UK/0441/70/032/000/0147/0152

CIRC ACCESSION NO--AT0112073

UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0112073

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THEORETICAL STUDY OF THE COOLING OF A SPHERICAL SPACE BOUNDED BY A SYSTEM OF 3 IDENTICAL SPHERICAL RINGS OF VARIABLE THICKNESS, INTERSECTING EACH OTHER AT RIGHT ANGLES IN THREE MUTUALLY PERPENDICULAR PLANES. IT IS ASSUMED THAT THE HEAT CONDUCTION COEFFICIENT OF THE MATERIAL OF THE RINGS IS CONSTANT AND THAT THE SURFACE OF THE RINGS IS A GREY DIFFUSELY RADIATING BODY WITH A CONSTANT LEVEL OF BLACKNESS. IT IS ASSUMED FURTHER THAT THE THERMAL FLUXES ARE PARALLEL TO THE SYMMETRY PLANES OF THE RINGS, THAT THE INTERSPACES BETWEEN THE RINGS ARE SO SMALL THAT THEIR RADIATION OUTPUT IS ZERO, AND THAT THE AMBIENT MEDIUM IS AN ABSOLUTELY BLACK BODY WITH ZERO TEMPERATURE. EQUATIONS DESCRIBING THE RADIATIVE HEAT TRANSFER IN THIS SYSTEM ARE DERIVED AND ANALYZED. FACILITY: KIIVS'KII DERZHAVNII UNIVERSITET, KIEV, UKRAINIAN SSR.

UNCLASSIFIED



USSR

UDC 681.121.8:662.75:629.7

GROKHOL'SKIY, A.L., YAKOVLEV, L.G., and TIKHOMIROV, Yu. F.

"On the Problem of Optimum Processing of Output Data of Aviation Fuel Gauges"

Tr. Metrol In-tov SSSR [Works of Metrological Institutes USSR], Vol 135(199), 1972, pp 201-205 (from Referativnyy Zhurnal, No 6, Jun 72. 34. Aviation and Rocket Engines. Abstract No 6.34111)

Translation: The necessity to present the output signal as a transient random process depends on the effect of detrimental dynamic disturbances on the exactness of aviation fuel gauges. From the viewpoint of the theory of optimum filters, the schema for the separation of the mathematical expectation of this process is synthesized from the additive mixture of the slowly changing component of the useful signal, coincident with the mathematical expectation of the process, and the stationary random interference. The possibility is indicated to use for these purposes the informative and structural surplus of control means of the quantity and the fuel consumption on board, e.g. when receiving information of the initial process from several gauges. One illustr., two biblio. refs.

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USSR

UDC 621.398.694.7-531.7

GROKHOL'SKIY, A. L., SALOV, G. V., TIKHOMIROV, Yu. F., and YAKOVLEV, L. G.  
(Kiev)

"Measuring a Mass of a Substance by Natural Vibration Frequency of the  
Object"

Novosibirsk, Avtometriya No 3, May-Jun 72, pp 54-60

Abstract: This article is an extension of a earlier investigation by two of the authors on the use of a control object as a primary measuring converter for obtaining data on the value of a controlled parameter. It presents an analysis of experimental data on the method of measuring a mass of a substance by natural vibration frequency of a dynamic system formed by container-filler. Characteristics of the control object being simultaneously a sensitive element of a pickup with variable filler quantity are considered. The mechanical sensitive element is considered as an oscillator in the generating circuits and as resonator in selective circuits. The anti-interference characteristics of such a measuring system are evaluated. The experimental data presented confirms the possibility of obtaining the results of measurements in a wide range of temperatures with inaccuracy of the order of 1% or less, depending on the objects design characteristics.

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USSR

UDC: 621.317.7(02)

KARANDEYEV, K. B., GRINEVICH, F. B., GROKHOL'SKIY, A. L. et al.

"Electronic High-Speed Balanced-Bridge Instruments"

Bystrodeystvuyushchiye elektronnyye kompensatsionno-mostovyye pribory (cf. English above), Moscow, "Energiya", 1970, 135 pp, ill. 35 k. (from RZh-Radio-tehnika, No 12, Dec 70, Abstract No 12A294 K)

Translation: The book deals with monitoring and measuring equipment designed for measuring the components of impedance under a variety of experimental and production conditions. The time for a single measurement of impedance parameters may be reduced to hundredths of a millisecond, and measurement error may be held down to tenths of a percent. The principles of construction of high-speed electronic balanced-bridge instruments are set forth, their fundamental properties are outlined and their specific elements are given, and schematics are analyzed together with the characteristics of a number of specific devices. Annotation.

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USSR

UDC: 621.317.337

GROKHOL'SKIY, A. L., SHISHKIN, V. P.

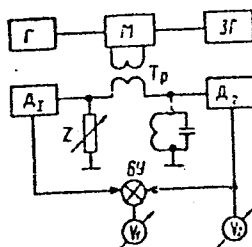
"A Modulation-Difference Method of Measuring the Q of Oscillatory Systems"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Methods. Vol. 1), Novosibirsk, 1970, pp 22-24 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2A358)

Translation: It is pointed out that if an AM signal is fed to a tuned circuit, the side frequencies undergo amplitude-phase distortions which are determined by the Q of the circuit and the modulation frequency. The circuit shown in the accompanying diagram is based on the principle of comparing the voltages across the tank circuit and impedance Z. In the figure: F is a high-frequency oscillator, E is an audio oscillator, M is a modulator, Tp is a high-frequency transformer, A<sub>1</sub> and A<sub>2</sub> are envelope detectors, Z is a variable resistor, BY is a computer device, V<sub>1</sub> and V<sub>2</sub> are peak-to-peak voltmeters. An expression is derived for the difference voltages, and it is shown that when certain conditions are satisfied V<sub>1</sub> can be graduated in Q units. The proposed method should assure high measurement precision. (See also RZh-Radiotekhnika, 1970, 12A379). E. L.

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GROKHOL'SKIY, A. L., SHISHKIN, V. P., Dokl. Vses. nauchno-tekhn. konferen-  
tsii po radiotekhn. izmereniyam. T. 1, Novosibirsk, 1970, pp 22-24



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USSR

UDC 576.895.42-078.2:543.545

KRASNOBAYEVA, Z. N., STEPANCHENOK-RUDNIK, G. I., and GROKHOVSKAYA, I. M.,  
Vector Laboratory, Institute of Epidemiology and Microbiology imeni, N. F.  
Gamaleya, Academy of Medical Sciences USSR

"Electrophoretic Study of Organ Homogenates and Hemolymph of Blood-Sucking  
Ticks"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Boolezni, No 6, 1971,  
pp 704-708

Abstract: Homogenates of whole argasid and ixodid ticks belonging to 8  
genera and 12 species and the hemolymph of a single argasid tick species  
(*Alveonatus lahorensis*) in the imago and nymph III phases were compared by  
agar electrophoresis to determine the nature of the protein spectra. The  
electrophoretic mobility of the protein fractions was found to differ  
between adult ticks of the two families and between several genera of ixodid  
ticks (*Hyalomma*, *Dermacentor*, *Rhipicephalus*). Generic and even specific  
differences were evident among the argasid ticks in the nymphal stage.  
*Ornithodoros papillipes* nymph III contained 2 protein fractions, *O. porcinus*  
*domesticus* 3, and *A. lahorensis* 5. The electrophoretic pattern was the  
same within a single species. One protein fraction was invariably found in  
the larval stage in the homogenates. The hemolymph of *A. lahorensis* exhibited  
differences between the imago and nymph III. There may be sex differences in  
1/2

USSR

KRASNOBAYEVA, Z. N., et al., Meditsinskaya Parazitologiya i Parazitarnyye  
Beoezni, No 6, 1971, pp 704-708

protein fractions in A. lahorensis and other ticks,

2/2

- 71 -

UDC 576.895.421.098.217/218

USSR

STEPANCHENOK-RUDNIK, G. I., POTASHOVA, L. A., and ~~GROKHOVSKAYA, I. M.~~  
Department of Natural Focus Infections, Institute of Epidemiology and Micro-  
biology imeni N. F. Gamaleya, Academy of Medical Sciences USSR

"Nitrogen and Phosphorus Contents of Intact Blood-Sucking Ticks (Ixodoidea)  
and of Some of Their Organs"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 5, 1971,  
pp 584-589

Abstract: Analysis of total nitrogen and phosphorus content in adult ticks belonging to two families (Ixodidae and Argasidae), 6 genera, and 12 species showed that all the species were essentially alike in this respect, with the nitrogen and phosphorus contents ranging from 12.8 to 17.5% and 0.36 to 0.96%, respectively (except in the case of *Haemaphysalis concinna*, in which the levels were appreciably higher). The nitrogen content was somewhat higher in males. Both total nitrogen and total phosphorus increased as the tick developed from larva to nymph. Analysis of total nitrogen and total phosphorus in the intestine, salivary glands, Malpighian vessels, gonads, and testes showed that the amounts of these elements was highest in the Malpighian vessels and lowest in the intestine.

1/1

- 16 -



USSR

UDC 576.851.71.077.3

VORONTSOVA, T. A. and GROKHOVSKAYA, I. M., Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR

"The Antibody Neutralization Test as a Means of Detecting Dermacentroxenus sibericus in Experimentally Infected Dermacentor pictus Ticks"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 5, 1971, pp 581-584

Abstract: The antibody neutralization test was compared to bioassay as a means of detecting Dermacentroxenus sibericus, the agent of tickborne typhus in Siberia, in experimentally infected live and dead ticks. While the antibody neutralization test quickly revealed the presence of D. sibericus antigens in live ticks, no clinical symptoms of the disease were found in guinea pigs used as test animals, and it was only after 3 weeks that the pathogen was demonstrated by immunological indices. When experimental animals were infected with dead dried ticks, not only were no clinical symptoms observed but the immunological indexes were negative. The simplicity, convenience, and speed of the proposed method make it superior to bioassay, especially for material containing dead D. sibericus. This microorganism is known to have a short survival time in the environment.

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1/2 013 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--EXPERIMENTAL PREREQUISITES FOR SUBSTANTIATION OF THE POSSIBLE ROLE  
OF TICKS IN EPIDEMIOLOGY OF TYPHUS (EXANTHEMATIC) -U-  
AUTHOR-(02)-IGNATOVICH, V.F., GROKHOVSKAYA, I.M.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK AKADEMII MEDITSINSKIKH NAUK SSSR, VOL 25, NO 2, 1970, PP  
22-30  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TICK, EPIDEMIC TYPHUS, GUINEA PIG, RICKETTSIA PROWAZEKI

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1986/1845

STEP NO--UR/0248/70/025/002/0022/0030

CIRC ACCESSION NO--AP0103593

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0103593

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AS A CONTINUATION OF PRIOR INVESTIGATIONS (I.M. GROKHOVSKAYA ET AL., 1966, 1967, 1968; V.F. IGNATOVICH ET AL., 1968A, 1968B) IN THE PRESENT WORK WE INVESTIGATED THE INCIDENCE OF TICK INFECTION ON INFECTED GUINEA PIGS, THE EFFECT OF INFECTIVE DOSAGE ON INFECTIVITY OF TICKS, THE POSSIBILITY OF TRANSPHASE AND TRANSOVARIAN TRANSMISSION OF TYPHUS PATHOGEN, TIME OF RETENTION OF RICKETTSIAE IN THE TICK ORGANISM. IN ADDITION, A STUDY WAS MADE UNDER EXPERIMENTAL CONDITIONS OF THE POSSIBLE ROUTES OF TRANSMISSION OF R. PROWAZEKII BY INFECTED TICKS TO WARM BLOOD ANIMALS AND INTO THE ENVIRONMENT.

UNCLASSIFIED

GROKHOVSKIY, D.V.

mechanical engineering

THE PROBLEM OF PRACTICAL ANALYSIS OF VIBRATION-ACOUSTICAL PROPERTIES OF SEA-  
HULLS AT HIGH  
P. A. Grokhovskiy and V. M. Bogachev (Leningrad)

The difficulty of the problem of determining the causes of increased structural noise level in pumps in various frequency ranges results from the continuity of the frequency spectrum of vibrations and the dual nature of the information included in the spectrograms. The variety of factors influencing the vibration-acoustical characteristics of the pump and the absence of an easy means for the possibility of establishing the functional relationship between parameters of the oscillating process and the design of the machine do not allow a theory of vibration-acoustical diagnosis of pumps to be constructed at the present time.

Tests are described, performed during vibration-acoustical diagnosis of one pump, and calculation and experimental results are presented, in which the physical nature of the perturbing forces in various portions of the frequency range are studied, the specifics of the design and its dynamic modeling in these frequency subranges are presented, and the statement of expedient experiments is analyzed.

SO: NACA Technical Translation

NASA TT F-644

July 1973

3 Larkin

1/2 028 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--SEROTONIN METABOLISM IN SOME DISEASES OF THE ALIMENTARY TRACT -U-

AUTHOR--GROKHOVSKIY, L.P.

COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 5, PP 45-48

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DIGESTIVE SYSTEM DISEASE, URINE, ORGANIC ACID, INDOLE  
DERIVATIVE, EXCRETION, SEROTONIN, METABOLISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3001/0690

STEP NO--UR/0504/70/042/005/0045/0048

CIRC ACCESSION NO--AP0126403

UNCLASSIFIED

2/2 028  
CIRC ACCESSION NO--AP0126403

UNCLASSIFIED

PROCESSING DATE--23OCT70.

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXCRETION OF 5 OXINDOLACETIC ACID (5-OUYK) WITH THE URINE WAS STUDIED IN 250 PATIENTS WITH DISEASES OF THE ALIMENTARY TRACT AND 24 PRACTICALLY HEALTHY PERSONS. THE CONTENT OF SEROTONIN AND ITS DERIVATIVES IN THE GASTRIC JUICE IN 227 PATIENTS AND PRACTICALLY HEALTHY INDIVIDUALS WAS DETERMINED BY A MODIFIED METHOD AFTER UDENFRIEND. IT WAS ESTABLISHED THAT EXCRETION OF 5-OUYK IN PATIENTS WITH GASTRIC AND DUODENAL ULCER AND CHRONIC GASTRITIS VARIATES WITHIN THE NORMAL VALUE AS A RULE. A RELATIVELY HIGH CONTENT OF 5-OUYK IN THE URINE WAS OBSERVED IN CHRONIC ENTERITIS AND IN SOME PATIENTS WITH DUODENAL ULCER, A LOWERED ONE IN ULCEROUS COLITIS, LIVER CIRRHOSIS AND GASTRIC CARCINOMA. THE PRESENCE OF PHYSIOLOGICALLY ACTIVE SEROTONIN WAS REVEALED IN THE GASTRIC JUICE OF PRACTICALLY HEALTHY INDIVIDUALS. IN HALF OF THE PATIENTS WITH DUODENAL ULCER THE SEROTONIN CONTENT IN THE GASTRIC JUICE ON A FASTING STOMACH APPEARED TO BE INCREASED; IN PATIENTS WITH GASTRIC ULCER AND CHRONIC GASTRITIS IT WAS NORMAL. AS A RULE. IN ALIMENTARY JUICE CONCENTRATION OF SEROTONIN AND ITS DERIVATIVES IN PATIENTS WITH DUODENAL ULCER WAS NORMAL OR INCREASED, IN CHRONIC GASTRITIS AND GASTRIC ULCER THIS CONCENTRATION WAS LOWERED. THERE IS AN OPINION CONCERNING THE PATHOGENETIC SIGNIFICANCE OF LOCAL DISORDERS OF SEROTONIN METABOLISM IN THE MENTIONED DISEASES. FACILITY:  
LABORATORIYA OBmena VESHOHESTV I PISHCHEVAZENIYA U BEREMENNYKH INSTITUTA AKUSHERSTVA I GINEKOLOGII AMN SSSR, LENINGRAD.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--DETERMINATION OF SEROTONIN IN GASTRIC JUICE BY A FLUOROMETRIC  
METHOD -U-  
AUTHOR-(03)-MORGZOVETSKIY, O.V., GROKHOVSKIY, L.P., OSTROUKHOV, V.D.  
COUNTRY OF INFO--USSR  
SOURCE--LAB. DELO 1970, (3), 152-4  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--SEROTONIN, GASTROINTESTINAL SYSTEM, FLUOROMETER, DIGESTIVE  
SYSTEM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3001/1797 STEP NO--UR/9099/70/000/000/0152/0154  
CIRC ACCESSION NO--AP0127211  
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0127211

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEROTONIN WAS EXTD. FROM GASTRIC  
JUICE WITH BUTANOL AND DETD. FLUOROMETRICALLY AFTER A 2ND EXTN. WITH  
HEPTANE WITH 0.1 N HCL IN THE PRESENCE OF 3N HCL. FACILITY:  
LENINGRAD. GASTROENTEROL. LAB., LENINGRAD, USSR.

UNCLASSIFIED



USSR

UDC: 535.311:537.581

PETUKHOVA, T. M., EKHARENKOV, V. V., GROKHOVSKIY, V. I., Sverdlovsk

"State of a Metal Surface After Laser Exposure"

Kishinev, Elektronnaya Obrabotka Materialov, No 4(46), Aug/Sep 72, pp 28-31

Abstract: The paper gives the results of a study of the surface relief, chemical composition, microhardness, structure and exoemission properties of steel and iron surfaces exposed to a laser beam from a K-3M ruby laser in the free emission mode with a pulse duration of  $3 \cdot 10^{-3}$  s. The beam was concentrated by a lens with a 10 mm focal length. The emission energy in the pulse was of the order of 1.5 J. It was found that the high temperature gradients stimulated by the powerful luminous energy flux cause an abrupt change in the mechanical and physical properties and the chemical composition in the zone near the crater. The structure of the metal determines the nature of pits, the relief, and hardening when a metal surface is laser-machined.

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Devices

USSR

UDC: 681.327.66

GROMAKOVSKIY, V. A.

"A Device for Controlling the Bit Lines of a Cryotron Associative Memory Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 20, Jul 72, Author's Certificate No 343298, Division G, filed 6 Aug 70, published 22 Jun 72, p 174

Translation: This Author's Certificate introduces a device for controlling the bit lines of a cryotron associative memory device with a single number bus in each bit line. The device contains a circuit for storing selected numbers, a circuit for separating a sequence of selected numbers, and a loop with branches of different inductance which ties together groups of bit lines. The branch with lower inductance contains cryotron diodes, and in each bit line of a group the controlling circuits of these cryotrons are connected in the first branch of the number bus loop, which passes through the memory cells. The branch with lower inductance contains the controlling circuits of cryotrons whose diodes in each bit line are connected in the second branch of the number bus loop. As a distin-

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USSR

GROMAKOVSKIY, V. A., USSR Author's Certificate No 341298

guishing feature of the patent, the design is simplified and speed is increased by adding a first cryotron whose diode is connected in the branch of the loop having the lower inductance while its controlling circuit is connected in the circuit for separating a sequence of selected numbers, a second cryotron whose controlling circuit is connected in the branch of the loop having the higher inductance while its diode is connected in the circuit for storing selected numbers, and by adding a bus to each bit line of a group, which passes through the entire memory device and contains the controlling circuit of the corresponding cryotron whose diode is connected in the first branch of the number bus loop.

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USSR

UDC 681.327

GROMAKOVSKIY, V. A.

"Device for Control of Number Lines of Cryotron Associative Memory Device"

USSR Author's Certificate No. 276167, Filed 11/08/69, Published 8/10/70 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No. 5, 1971, Abstract No 5B306P).

Translation: Devices are known for control of cryotron associative memory units with algorithmic separation of the multiple-value response. These devices contain circuits for separation of the multiple-value response and circuits for recording of the numbers selected in the number wires of the cryotron elements. The process of separation consists of a number of operations of current switching in the comparison number wire. The comparison circuits contained in the comparison number wire of the memory locations have significant inductance, the parasitic influence of which retards the process of switching of current in the comparison number wire. A device is known in which the inductance of the comparison circuits of the memory locations has no influence on the process of separation of the sequence of numbers selected, but the process of input of current to the comparison circuit of the memory locations is significantly retarded in this case. The purpose of the invention is the development of the circuit of a controlled device for the number line of a cryotron associative

1/2

USSR

GROMAKOVSKIY, V. A., USSR Author's Certificate No 276167, Filed 11/08/69,  
Published 8/10/70 (Translated from Referativnyy Zhurnal Avtomatika, Tele-  
mekhanika i Vychislitel'naya Tekhnika, No 5, 1971, Abstract No 5B306P)

memory unit allowing maximum acceleration both of the process of separation of the sequences of numbers selected and of the process of transmission of current into the comparison number wire. This is achieved by introducing a selection circuit with branches of varying inductance to the number line control device. The lower inductance branch of this circuit includes a cryotron tube controlled by a recording circuit—for example, using a transitional circuit—while the branch with higher inductance includes the cryotron elements of the separation circuit for the multivalued response and the control circuit of the cryotron designed for switching of the number wire control circuits. 1 fig.

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1/2 017 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--SHAFTS AND AXLES. DESIGN AND CALCULATION -U-

AUTHOR--(04)--SERENSEN, S.V., GROMAN, M.B., KOGAYEV, V.P., SHNEYDEROVICH,  
R.M.  
COUNTRY OF INFO--USSR

SOURCE--(VALY I OSI. KONSTRUIROVANIYE I RASCHET) 2ND ED. MOSCOW,  
MASHINOSTROYENIYE, 1970, 318 PP  
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--SHAFT, STRESS, MATHEMATIC EXPRESSION, MECHANICAL STRENGTH,  
STRUCTURAL ENGINEERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3003/1701

STEP NO--UR/0000/70/000/000/0001/0318

CIRC ACCESSION NO--AM0130570

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AM0130570

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: INTRODUCTION

3. CHAPTER 1. LOADS RECEIVED BY SHAFTS AND AXLES 9. 2. STRUCTURAL  
SHAPES AND MATERIALS OF SHAFTS AND AXLES 37. 3. DETERMINATION OF  
INTERNAL FORCES AND NOMINAL STRESSES 67. 4. CALCULATION OF STATIC  
STRENGTH AND ENDURANCE 89. 5. RIGIDITY OF SHAFTS 119. 6.  
CHARACTERISTICS OF CALCULATION OF MULTIBEARING SHAFTS AND CRANKSHAFTS  
144. 7. PROBABILITY METHODS FOR CALCULATION OF STRENGTH OF SHAFTS AND  
AXLES UNDER VARIABLE LOADS 172. 8. CALCULATION OF SIMPLE SHAFTS 248.  
9. CALCULATIONS OF COMPLEX SHAFTS 264. CONCLUSION 312. THE BOOK  
DEALS WITH CONTEMPORARY METHODS FOR CALCULATION OF STRENGTH AND RIGIDITY  
OF SHAFTS AND AXLES. IT WAS WRITTEN FOR DESIGNERS.

UNCLASSIFIED

USSR

UDC 576.858.095.383:576.895.771

RAYKOVA, A. P., KLIMENKO, S. M., KOSTYRKO, I. N., GROMASHEVSKIY, V. L.,  
and L'VOV, D. K., Institute of Virology imeni D. I. Ivanovskiy, Academy of  
Medical Sciences USSR, Moscow

"An Investigation of the Ability of Sumah Virus From the Uukuniemi Group  
to Proliferate in Aedes Aegypti Mosquitoes"

Moscow, Voprosy Virusologii, No 6, Nov/Dec 71, pp 731-735

Abstract: A. aegypti mosquitoes experimentally infected with Sumah virus  
(added to nutrient suspension) were investigated by electron microscopy  
and titrations on mice for 2 months. The results revealed a regular re-  
production of the virus in the mosquitoes. The virus is present in the  
cytoplasm, the intercellular spaces in the epithelial tissues, and salivary  
gland ducts of the mosquitoes from the 11th day after infection, but trans-  
mission by bite occurs only when the virus concentration is at least 2.5  
lg ID<sub>50</sub> per 0.01 ml of mosquito tissue. Virus particles have an oval shape,  
with the long axis 900-1000 A and the short axis 700-800 A long, and they  
have a two-layer membrane which is 90-100 A thick.

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Vector Studies

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USSR

UDC 595.771.576.858

SOKOLOVA, E. I., MIRZOYEVA, N. M., KULIYEVA, N. M., GROMASHEVSKIY, V. L., and CHERVONSKIY, V. I., Institute of Virology, Microbiology, and Hygiene imeni G. M. Musabekov, Ministry of Health Azerbaydzhan SSR, Baku, and Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"Experimental Transmission of Sindbis Virus by Aedes aegypti L. Mosquitoes"

Leningrad, Parazitologiya, No 5, 1971, pp 405-407

Abstract: Aedes aegypti is susceptible to Sindbis virus, strain A3-574. Twenty-four to forty-eight hours after the mosquitoes were allowed to feed on mouse tails filled with a viral suspension or on suckling mice, the virus titer in the insects was quite high,  $10^{-5}$ , and 2 days later it rose to  $10^{-6}$ . On the 7th day it fell to  $10^{-4}$  but rose on the 10th day to  $10^{-5}$ , reaching a peak on the 16th day,  $10^{-6}$ . The high titers persisted until the 26th day when they began to fall to  $10^{-3}$  (on day 29). Three to five days after suckling mice were exposed to the infected mosquitoes, the animals developed paralysis of the hind legs and died.

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USSR

UDC 576.858.25.095.38:576.695.42

L'VOV, D. K., GROMASHEVSKIY, V. I., SIDOROVA, G. A., TSIRKIN, Yu. M.,  
CHERVONSKIY, V. I., GOSTINSKHCHIKOVA, G. V., and ARISTOVA, V. A., Institute  
of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, Moscow

"Isolation of a New Arbovirus "Baku" of the Kemerovo Group From Argasid Ticks  
Ornithodoros Coniceps in Azerbaydzhan"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, pp 434-437

Abstract: Seventeen strains of arboviruses were isolated from Ornithodoros  
coniceps ticks collected (1,710 specimens) in the spring and summer of 1970 in  
nests of herring gulls (Larus argentatus) on the islands of the Baku Archipelago  
in the Caspian Sea. So far, four strains -- prototypes LEIV-28A, -35A, -36A,  
and -46A -- were analyzed and found to be identical. They do not agglutinate  
goose erythrocytes. Serological identification tests performed on the  
LEIV-46A prototype revealed that this strain belongs to the antigenic complex  
of Chenua virus of the Kemerovo group. According to the results of complement  
fixation and neutralization reaction tests, the virus differs from Chenua,  
Punta Salinas, Mono Lake, Kemerovo, Tribec, Lipovnik, and Wad Modani viruses.  
The new virus has been named "Baku virus."

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USSR

UDC 595.771-12:616.988.25-092.9

L'VOV, D. K., KOSTYRKO, I. N., and GROMASHEVSKIY, V. L., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"Experimental Infection of *Aedes aegypti* and *Culex pipiens molestus* Mosquitoes With Tyuleniy Virus"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 2, 1973, pp 191-193

Abstract: *Aedes aegypti* and *Culex pipiens molestus* mosquitos were infected with Tyuleniy virus, a B group arbovirus isolated in 1969 from the tick *Ixodes (Ceraticxodes) putus* collected on Tyuleniy Island in the Sea of Okhotsk basin from guillemots (the virus was subsequently isolated from *I. putus* on the Commander Islands, Murmansk littoral, and Oregon littoral). The virus titers in the infective material ranged from 5.5 to 6.5 lg LD<sub>50</sub>/0.01 ml for suckling mice inoculated intracerebrally. Virus was regularly detected in the mosquitoes the first day after infection and again from the 4th to 31st days thereafter in titers of 1.5 to 3.5 lg LD<sub>50</sub>/0.01 ml. The virus was transmitted to suckling mice by bites of the mosquitoes 7 to 19 days after infection.

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: USSR

UDC 576.858.25

GAYDAMOVICH, S. YA., NIKIFOROV, L. P., GROMASHEVSKIY, V. L., OBUKHOVA, V. R., KLISENKO, G. A., CHERVONSKIY, V. I., and MEL'NIKOVA, YE. E., Institute of Virology imeni D. I. Ivan ovskiy, USSR Academy of Medical Sciences, Moscow

"New Arbovirus Sumakh from the Uukuniemi Group"

Moscow, Voprosy Virusologii, No 1, Jan/Feb 71, pp 21-25

Abstract: Isolation of the arbovirus Sumakh in the USSR is described for the first time. The virus was obtained from the hearts and lungs of black-birds (*Turdus merula*) collected in Azerbaydzhan. The virus was similar to but not identical with Uukuniemi, as shown in the agar gel diffusion test, but not by the complement fixation test. The isolated virus was pathogenic for suckling white mice. An incubation period of 11 days was found upon intracerebral, which in subsequent passages was reduced to 96 hours. Mice 1-3 days of age were most susceptible. An antigen for hemagglutination reactions was prepared from suckling mouse brains by the ucrose-acetone method. The titer of this antigen did not exceed 1:64. Subsequent workup with Tween-80 and ether raised the titer to 1:256-1:512. When the antigen was prepared by the freon method, the material was enriched with Tween-80 and ether and 1/2

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- USSR

GAYDANOVICH, S. YA., et al., Voprosy Virusologii, No 1, Jan/Feb 71, pp 21-25

could serve for agglutination of erythrocytes in dilutions of 1:32-1:64. Optimum hemagglutination was achieved at pH 5.8 and at a temperature of 37° C. According to preliminary data on agar diffusion, the Sumakh virus is not identical with the Uukuniemi virus. A detailed study of the antigenic structure of Sumakh virus is under way.

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USSR

UDC 576.858.25.095.38:576.895.421

L'VOV, D. K., TIMOFEYEV, A. A., GROMASHEVSKIY, V. L., and CHERVONSKIY, V. I.,  
Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR  
and Sakhalinskaya Oblast Sanitary Epidemiological Station, Yuzhno-Sakhalinsk

"Isolation of Arboviruses from Ixodes (Ceraticodes) putus Pick.-Cambr Ticks Col-  
lected in a Bird Colony on Tyuleniy Island in the Sea of Okhotsk"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 70, pp 440-444

Abstract: Forty-one strains of at least two different arboviruses were isolated from Ixodes (Ceraticodes) putus Pick.-Cambr ticks collected from the common guillemot, tern, penguin, and other aquatic birds nesting on Tyuleniy Island in the Sea of Okhotsk. The virus was isolated from females before oviposition from females that moulted in the laboratory engorged nymphs, from males (which do not feed on blood), and from nymphs. Suckling mice inoculated with a suspension of infected ticks developed paralysis of the extremities and clonic convulsions after a latent period of 5 to 14 days.

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GROMBAKH S.M.

MEDICINE

THE HEALTH STATUS OF SCHOOL CHILDREN

Article by S.M. Grombakh, G.F. Sol'nikova, Institute of Hygiene of Children and Adolescents, USSR Ministry of Health, and Institute of Psychology of Children and Adolescents, USSR Academy of Pedagogic Sciences, Moscow; Moscow, Ussr. Meditsinskii Zhurnal, No. 1, 1972, pp. 29-35.

School children make up more than one-fifth of the entire population of our country. They are the direct reserve of tomorrow's working people and army. In 1970, 3,225,400 young people received their secondary education in the Soviet Union. This means that even more have begun to work. The degree of freedom of future choice of a profession and consequently determination of employment and supply of necessary specialists to the national economy depends on the health of school children. But even at the present time, the physical condition determines to some extent the effectiveness of learning, i.e., achievement [scholastic]. It is a known fact that children who have been sick are poorer achievers than healthy children. This is particularly evident in the lower grades. In Krasnodar, for example, 72 percent of the children who were not sick during the year had good and excellent marks in first grade and 71.4 percent had much marks in third grade, whereas among those who did get sick, only 68.4 percent of those in first grade and 57.3 percent of those in third had good and excellent marks (G.N. Bolgorodskaya and S.M. Belgorodskaya, 1969). A link between achievement and health is also observed abroad. In Poland, several papers stressed the role of health deviations as a factor in nonachievement. Analogous data were published in the GDR, Romania, and Bulgaria.

If we add to this the well known thesis that the health of adults is largely formed in childhood, it becomes obvious that the physical condition of school children should be closely watched and studied for preventive planning and implementation of the necessary health-improving measures.

A true idea about the health status of each school child and, consequently, of groups of children, could be obtained only by taking into consideration the four following criteria that determine this status as an aggregate: 1) presence or absence of chronic disease; 2) level and degree of coordination

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--EFFECT OF TISSUE AND HUMORAL FACTORS ON VISCIOUS METAMORPHOSIS OF  
THROMBOCYTES -U-  
AUTHOR--(02)-MARTYNOV, S.M., GROMNATSKIY, N.I. G  
COUNTRY OF INFO--USSR  
SOURCE--VRACHEBNOYE DELU, 1970, NR 4, PP 98-100  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--THROMBOCYTE, BLOOD COAGULATION, BLOOD CELL, FATTY TISSUE,  
BRAIN TISSUE, MUSCLE TISSUE  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3002/1702 STEP NO--UR/0475/70/000/004/0098/0100  
CIRC ACCESSION NO--AP0129072  
UNCLASSIFIED



2/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70  
CIRC ACCESSION NO--AP0129072  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS INDICATE THAT TISSUE  
EXTRACTS (SUBCUTANEOUS FATTY CELLULAR TISSUE, BRAIN MUSCLES AND KIDNEYS)  
AND ALSO FORM ELEMENTS OF THE BLOOD INDUCE AGREGATION OF THROMBOCYTES IN  
CITRATE PLASMA. THE BASIS OF THIS THROMBOCYTOAGGREGATING EFFECT OF THIS  
EXTRACTS IS ACTIVATION OF PHASE I OF BLOOD COAGULATION AND  
THROMBOGENESIS. THROMBOCYTOAGGREGATING EFFECT OF SOME TISSUES AND BLOOD  
CELLS MAY BE THE BASIS OF THE PATHOGENESIS OF INTRAVASCULAR THROMBOSIS.  
FACILITY: L'VOVSKOGO NAUCHNO-ISSLED. INSTITUTA GEMATOLOGII I  
PERELIVANIYA KROVI.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--EFFECT OF CATECHOLAMINES ON THE VISCOUS METAMORPHOSIS OF  
THROMBOCYTES AND BLOOD COAGULATION SYSTEM -U-  
AUTHOR--GROMNATSKIY, N.I.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 3, PP102-104

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BLOOD COAGULATION, THROMBOCYTE, CATECHOLAMINE, NORPINEPHRINE,  
EPINEPHRINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FNAME--1986/0980

STEP NO--UR/0475/70/000/003/0102/0104

CIRC ACCESSION NO--AP0102919

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102919

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CATECHOLAMINES INDUCE AGGREGATION AND INCREASE ADHESIVENESS OF THROMBOCYTES IN VITRO, NORADRENALINE EXERTING A MORE MARKED THROMBOAGGREGATING EFFECT THAN ADRENALINE. PARENTERAL ADMINISTRATION OF ADRENALINE INCREASES VISCOUS METAMORPHOSIS OF THROMBOCYTES AND RAISES THE TOTAL BLOOD COAGULATION ACTIVITY. VISCOUS METAMORPHOSIS OF THROMBOCYTES PLAYS THE PART OF A TRIGGER MECHANISM IN ACTIVATION OF BLOOD COAGULATION AND INTRAVASCULAR THROMBOSIS IN STRESS CONDITIONS.

UNCLASSIFIED

USSR

UDC 616.983.75-06:616.982.232-097.5

POKROVSKIY, V. I., SACHKOV, V. I., MATVEYEVA, S. M., VINOCHEROV, Yu. Ya.,  
GROMOGLASOVA, Ye. V., and BARKOVA, R. V., Moscow Medical Stenatological Insti-  
tute

"Group-Specific Antimeningococcus Antibodies in Various Forms of Meningococcus  
Infection in the Presence of Influenza Viruses"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 11, 1978,  
pp 115-120

Abstract: Circulating antimeningococcus group-specific antibodies the formation of which was triggered by meningococcus infection were studied. The precipitation method which included the diffusion of antigens, antibodies, and their complexes through a membrane was used. The blood sera of individuals without any contact with meningococcus infection contained in average 370  $\mu$ g/ml antibodies/body complex/ml, and it increased to 590  $\mu$ g/ml for the medical persons who had contact with patients carrying meningococcus infection. The number of antibodies in patients with pure meningitis was 920, 630, and 420  $\mu$ g/ml of blood serum during the first day in hospital, in 5-6 day, and at the time of hospitalization, respectively. Patients in whom meningitis was combined with meningococcus infection contained 120  $\mu$ g/ml, 140  $\mu$ g/ml antibodies/body complex/ml during the first day in hospital. When the meningitis became purulent, the

USSR

POKROVSKIY, V. I., et al., Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 11, 1972, pp 115-120

number of antibodies was 630, 553, and 510  $\mu$ g/ml during respective periods. The serologically detected influenza virus Hong Kong A2 produced the sub-clinical form of the meningococcus infection and increased the number of the infection carriers. Increase in the antibody titer toward influenza A2 viruses in patients with the meningococcus infection was, probably, the additional sensitizing factor which led to hyperergia and meningococcemia. This was accompanied by a decrease in the number of the anti-meningococcus antibodies and by titer increases of the antiviral antibodies. The immunologic process in the case of meningococcus infection combined with respiratory viral infection produced conditions favorable for anaphylactic reactions.

2/2

1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--PREPARATION AND STUDY OF BARIUM STRONTIUM NIOBATE SINGLE CRYSTALS  
-U-

AUTHOR--(05)--DUDNIK, O.F., GROMOV, A.K., KRAVCHENKO, V.B., KOPYLOV, YU.L.,  
KUZNETSOV, G.F.

CCOUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 386-8

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MIBIUM COMPOUND, BARIUM COMPOUND, STRONTIUM COMPOUND, CURIE  
POINT, SINGLE CRYSTAL GROWTH, DIELECTRIC CONSTANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1566

STEP NO--UR/0070/70/015/002/0386/0388

CIRC ACCESSION NO--AP0125192

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125192

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SINGLE CRYSTALS OF BA SUBX SR SUB1-X NB SUB2 O SUB6 WERE GROWN BY THE CZOCHRALSKI METHOD IN AN INDUCTION FURNACE FROM POWD. MIXTS. OF NB SUB2 O SUB5, SRCO SUB3, AND BACO SUB3. WHEN USING PT CRUCIBLES, COLORLESS CRYSTALS WERE OBTAINED, AND IN IR CRUCIBLES, DARK AMBER ONES. THE HABIT OF THE CRYSTALS WAS DETD. BY 24 FACES OF 4 PRISMS: {110}, {120}, {100}, AND {130}, THESE FACES BEING DIFFERENTLY DEVELOPED FOR CRYSTALS OF DIFFERENT COMPN. TEMP. DEPENDENCES OF DIELEC. CONSTS. ALONG THE C AXIS (EPSILON SUBC) AND ALONG THE ALPHA AXIS (EPSILON SUBALPHA) WERE DETD., AS WELL AS CURIE TEMPS.: FOR BA SUB0.25 SR SUB0.75 NB SUB2 O SUB6, 56 PLUS OR MINUS 3DEGREES; FOR BA SUB0.5 SR SUB0.5 NB SUB2 O SUB6, 119 PLUS OR MINUS 3DEGREES; FOR BA SUB0.75 SR SUB0.25 NB SUB2 O SUB6, 205 PLUS OR MINUS 3DEGREES. WITH INCREASING CURIE TEMP., AN INCREASE IN PEAK EPSILON SUBC VALUES WAS OBSD., AND DECREASE IN EPSILON SUBC VALUES AT ROOM TEMP. THE EPSILON VALUE ALONG THE ALPHA AXIS IS MUCH LESS THAN ALONG THE C AXIS, AND THE DIELEC. ANOMALY ALONG THE ALPHA AXIS IS VERY SLIGHT. FACILITY: INST. RADIOTEKH. ELECTRON., MOSCOW, USSR.

UNCLASSIFIED

1/2 039 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--PREDICTION OF THE HERMETIC STATE OF PLASTICS IN CONTACT WITH  
CHEMICAL REAGENTS -U-  
AUTHOR-(02)-MANIN, V.N., GROMOV, A.N.  
COUNTRY OF INFO--USSR  
SOURCE--PLAST. MASSY 1970, (2), 68-70  
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CHEMICAL STABILITY, PLASTIC, CORROSION RATE, THERMODYNAMIC  
PROPERTY, GASKET, NITRIC ACID, HEPTANE, TEFLON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1992/1696

STEP NO--UR/0191/70/000/002/0068/0070

CIRC ACCESSION NO--AP0112690

UNCLASSIFIED



2/2 039

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0112690

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO METHODS (VIZ., A GRAVIMETRIC  
SORPTION METHOD AND A PERMEABILITY METHOD) WERE DEVELOPED FOR THE  
EVALUATION OF DURABILITY AND OPERATING LIMITS OF UNSTRESSED AND STRAINED  
PLASTICS IN CONTACT WITH CORROSIVE MEDIA. SEVERAL EQUATIONS WERE  
DERIVED FOR THE CALCN. OF PERMEABILITY OF CORROSIVE MEDIA FROM KINETIC  
AND THERMODYNAMIC CONSIDERATIONS. THE METHODS DEVELOPED WERE APPLIED  
EXPTL. TO POLY(TETRAFLUOROETHYLENE) GASKETS AND MEMBRANES IN CONTACT  
WITH CONCD. HNO SUB3 FOR 100-450 DAYS AT 50DEGREES WITH C SUB7 H SUB16  
AT 20DEGREES. THE EXPTL. DATA AGREE WITH CALCD. RESULTS.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--WHIPLASH INJURIES OF THE CERVICAL AND UPPER THORACIC SPINE IN THE  
EXPERIMENT AND CLINIC -U-  
AUTHOR-(04)-YUMASHEV, G.S., GROMOV, A.P., DMITRIYEV, A.YE., PYRLINA, N.P.  
COUNTRY OF INFO--USSR  
SOURCE--ORTOPEDIYA, TRAVMATOLOGIYA I PROTEZIROVANIYE, 1970, NR 6, PP 1-5  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--SPINAL CORD, SPINAL NERVE, INJURY  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY FICHE NO----FD70/605003/C05 STEP NO--UR/9115/70/000/006/0001/0005  
CIRC ACCESSION NO--AP0139508  
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--0409070

CIRC ACCESSION NO--AP0139508

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EVIDENCE SHOWS THAT THE EXPERIMENTALLY PRODUCED "WHIPLASH" INJURIES OF THE CERVICAL AND UPPER THORACIC SEGMENTS OF THE SPINE, VESSELS AND NERVES LOCALIZE PRINCIPALLY AT THE LEVEL OF C SUB5 -TH SUB3. THEIR INTENSITY DEPENDS ON THE RATE OF OSCILLATION OF THE HEAD DURING "JERK" AND MAGNITUDE OF THE ARISING OVERLOADS. IN 23 PATIENTS OBSERVED BY THE AUTHORS FOLLOWING AUTOACCIDENTS, THE CLINICAL PICTURE IN SUCH "WHIPLASH" TYPE OF INJURIES WAS FOUND TO BE REPRESENTED BY A RANGE OF REGULARLY RECURRING SYMPTOMS OF A PATTERN WHICH GIVES REASON TO SPEAK ABOUT, TRAUMATIC CERVICAL WHIPLASH SYNDROME". THE AUTHORS COMMUNICATE THEIR SCHEME OF EXAMINATION OF PATIENTS AND THE METHODS OF TREATMENT APPLIED BY THEM.  
FACILITY: KLINIKI TRAVMATOLOGII I ORTOPEDII I KAFEDRA SUDEBNOY MEDITSINY I MOSKOVSKOGO MEDITSINSKOGO INSTITUTA IM SECHENOVA.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--MASS YIELDS DURING THE FISSION OF URANIUM 235 BY THERMAL AND FAST  
NEUTRONS FOR FIXED KINETIC ENERGIES -U-  
AUTHOR--(03)-ARTEMEV, YU.M., GROMOV, A.V., PROTOPOPOV, A.N.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(2), 290-6

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--NUCLEAR FISSION, URANIUM ISOTOPE, THERMAL NEUTRON, FAST  
NEUTRON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1980/0387

STEP NO--UR/0387/70/011/002/0290/0296

CIRC ACCESSION NO--AP0048659

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--09OCT70-

CIRC ACCESSION NO--AP0048559

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MASS YIELDS ARE COMPARED FOR THE FISSION OF PRIME235 U BY THERMAL N AND BY 14.8 MEV N AT FIXED TOTAL KINETIC ENERGIES E SUBK OF 148-90 MEV. FOR EQUAL K SUBK, THE POSITIONS OF MAX. YIELDS COINCIDE FOR EXCITATION BY BOTH THERMAL AND 14.8 MEV N. DURING FISSION BY THERMAL N, THE NO. OF N IN THE NECK CONNECTING THE FRAGMENTS AT THE MOMENT OF FISSION IS 15 AT E SUBK EQUALS 189.9 MEV AND 35 AT E SUBK EQUALS 148.3 MEV. THIS INCREASE IN N NO. WITH DECREASE IN E SUBK CORRELATES WITH AN INCREASE IN DEFORMATION AT THE MOMENT OF FISSION. COMPARISON OF THE EXPTL. TOTAL MASS YIELD CURVE WITH THE STATISTICAL MODEL CALCD. CURVE SHOWS GOOD AGREEMENT, BUT THE CALCD. CURVES FOR FIXED VALUES OF E SUBK DIFFER CONSIDERABLY FROM THE EXPTL. CURVES.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--CORRELATION OF THE DIAMETER OF THE TRACK OF A FRAGMENT WITH  
SPECIFIC ENERGY LOSSES ON THE SURFACE OF GLASS -U-  
AUTHOR-(02)-GKOMOY, A.V., NIKOLAYEV, V.A.  
COUNTRY OF INFO--USSR  
SOURCE--PRIB. TEKH. EKSP. 1970, 1, 245  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--PARTICLE TRACK, FISSION PRODUCT, KINETIC ENERGY, DECELERATION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1989/1886 STEP NO--UR/0120/70/001/000/0245/0245  
CIRC ACCESSION NO--AP0108216  
UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70  
CIRC ACCESSION NO--AP0108216  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MAGNITUDE OF TRACK DIAM. OF  
THE FISSION FRAGMENT IS RELATED TO ITS SP. LOSSES DE-DX ON THE GLASS  
SURFACE. VALUES OF TIMES DE-DX FOR THE LIGHT AND HEAVY GROUPS OF  
FISSION FRAGMENT ARE ALMOST EQUAL AT THE BEGINNING OF THE PASSAGE AND  
BECOME INCREASINGLY DIFFERENT WITH PASSAGE THROUGH MATTER. THEREFORE,  
PRIOR TO REGISTRATION IN THE GLASS THE FISSION FRAGMENTS ARE PASSED  
THROUGH AN 1.5 MG-CM PRIME2 AL FILTER WHICH DOES NOT ABSORB FRAGMENTS  
PERPENDICULAR TO IT AND INSURES THAT THE DIFFERENCE IN DE-DX IS  
MAXIMIZED FOR HEAVY AND LIGHT GROUPS OF FRAGMENTS. THE CORRELATION  
BETWEEN DE-DX AND THE DIAM. OF THE FISSION FRAGMENT TRACK MAKES IT  
POSSIBLE TO MEASURE THE MOST PROBABLE VALUE OF THE ENERGY OF FISSION  
FRAGMENTS WITH AN ACCURACY OF NO LESS THAN 3PERCENT FOR FISSIONING  
ISOTOPES IN THE AREA FROM TH TO CF.

UNCLASSIFIED

UDC 612.126+546.32+546.33+612.014.426

USSR

MASLOVA, M. N., and GROMOV, A. YE., Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov, Academy of Science USSR, Leningrad

"Changes in Erythrocyte Membrane Permeability Under the Effect of Hyperoxia"

Moscow, Doklady Akademii Nauk SSSR, Vol 200, No 2, 1971, pp 465-468

Abstract: Potassium and sodium concentrations in erythrocytes were determined in blood samples obtained from rats before and after they were exposed to oxygen at 2.5-4.5 atm for 30 minutes and in blood samples obtained from rabbits before, during and after they were exposed to oxygen at 1, 2, 3, and 4 atm for 20 minutes at each stage. In rats (K<sup>+</sup>) was decreased and (Na<sup>+</sup>) was increased immediately after exposure to hyperoxia, and these shifts progressed with time so that 2 hours later the K/Na ratio, which normally is 10-15, was reduced to 1.5-3. Restoration was gradual, reaching the normal value only after 2-3 weeks. Similar changes were observed in rabbits, with greater hyperoxia causing a greater fall in the K/Na ratio. It is concluded that recovery is due to the entry of new erythrocytes into the circulation, while the change in the erythrocyte membrane permeability is irreversible, possibly due to damage to the ATP system.

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1/2 030 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--SOLUBILITY OF ANTIOXIDANTS IN CRYSTALLINE POLYETHYLENE -U-

AUTHOR-(04)-GROMOV, B.A., KORDUNER, N.YE., MILLER, V.B., SHLYAPNIKOV,  
YU.A.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(6), 1381-2 (PHYS CHEM)

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SOLUBILITY, POLYETHYLENE, ANTIOXIDANT ADDITIVE, ANILINE,  
AMINE, BENZENE DERIVATIVE, CRYSTAL, IR SPECTROSCOPY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/0710

STEP NO--UR/0020/70/190/006/1381/1382

CIRC ACCESSION NO--AT0124300

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE—30OCT70

CIRC ACCESSION NO--AT0124380

ABSTRACT/EXTRACT—(U) GP-0- ABSTRACT. THE SOLY. OF PH SUB2 NH,  
PHENYL,BETA, NAPHTYLAMINE, AND CYCLOHEXYLBENZENE (USED AS A MODEL  
COMPD.) IN POLYRYHYLENE (I) CONTG. VARIOUS AMTS. OF CRYST. PHASE (DETD.  
BY IR SPECTROSCOPY) DOES NOT DEPEND ON ITS CRYSTALLINITY, EXCEPT THAT  
WHEN THE CRYSTALLINITY APPROACHES 100PERCENT, THERE IS A LOWERING OF  
SOLY. THE SOLY. OF ANTIOXIDANTS IN THE CRYST. PHASE IS PROBABLY DUE TO  
MICROFISSURES. THERE IS A SOLY. INCREASE WITH I TEMP. IN THE  
30-60DEGREES RANGE. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 546.791.6.161

TSVETKOV, A. A., SELEZNEV, V. P., SUDARIKOV, B. N., GROMOV, B. V., Moscow  
Institute of Chemical Technology imeni D. I. Mendeleev

"Basic Uranyl Fluorides"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol XVIII, No 1, 1973, pp 12-15

Abstract: The possibility of the formation of the basic salt of uranyl fluoride was demonstrated by Marshall, et al. [J. Amer. Chem. Soc., No 76, 4279, 1954] when studying the phase diagram of the uranyl fluoride and water systems. Yu. A. Buslayev, et al. [Dokl. AN SSSR, No 148, 832, 1963] detected the existence of hydrated hydroxofluoruranyl which precipitates as the equilibrium bottom phase in the range of 0.59-8.39% by mass of HF. In the present work, the differential thermal analysis method was used in combination with chemical and x-ray phase analysis to demonstrate the existence of two separate hydrates of the basic salts of variable composition in the  $\text{UO}_2\text{-HF-H}_2\text{O}$  system: 1)  $\text{UO}_2(\text{OH})_x\text{F}_{2-x}\cdot 2\text{H}_2\text{O}$  and  $\text{UO}_2(\text{OH})_x\text{F}_{2-x}\cdot \text{H}_2\text{O}$  where  $x = 0.3-1.2$ . A study was made of the structure of the salts, and some of their thermodynamic characteristics were determined. The thermogravimetric curve of the decomposition of  $\text{UO}_2(\text{OH})_x\text{F}_{2-x}\cdot 2\text{H}_2\text{O}$  and tabulated data for the analysis of the basic salts of uranyl fluoride are presented. The heats of formation and the isobaric-isothermal potentials of the formation of the basic salts of uranyl fluoride and their errors are also calculated.

USSR

UDC 546.791.6'161-31'

TSVETKOV, A. A., SELEZNEV, V. P., SUDARIKOV, B. N., GROMOV, B. V., and PEGANOV, V. A., Moscow Chemical-Technological Institute imeni D. I. Mendeleev

"Complex Compounds of Uranyl Fluoride With Water and Hydrogen Fluoride"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 16, No 3, Mar 71, pp 768-771

Abstract: Three complex uranyl fluoride compounds were isolated in the system  $\text{UO}_2\text{F}_2\text{-HF-H}_2\text{O}$ :  $\text{H}_2[\text{UO}_2\text{F}_4] \cdot 4 \text{H}_2\text{O}$ ,  $\text{H}[\text{UO}_2\text{F}_3] \cdot 2 \text{H}_2\text{O}$ , and  $\text{H}[(\text{UO}_2)_2\text{F}_5] \cdot 4 \text{H}_2\text{O}$ . All of these materials form salts with alkali metals and ammonia; their structures were studied. Thermodynamical properties of these compounds were determined by means of differential thermal analysis.

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Radiation Chemistry

USSR

UDC 546.98'221.09:542.973.2:546.791.6

SOKOLOVA, I. D., SAVEL'YEVA, V. I., GROMOV, B. V., RYASHENTSEVA, M. A., and MINACHEV, Kh. M.

"Utilization of Palladium Sulfide as a Catalyst During the Reduction of the Uranyl Ion"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 45, Vyp 9, 1972, pp 1938-1941

Abstract: Palladium sulfide acts as a catalyst in the reduction of U(VI) to U(IV) by formaldehyde without using radiation. Approximately 75% of the U is reduced in a  $\text{SO}_4^{2-}$  solution, 50% in an  $\text{NO}_3^-$ , and 35% in a  $\text{Cl}^-$  soln. Addition of HF increases the yield to 100% and 90% for  $\text{SO}_4^{2-}$  and  $\text{NO}_3^-$ , respectively. The difference in yield is due to complexing of U(IV) by the anions; the more effectively free U(IV) is complexed, e.g. removed from solution, the further the reduction will proceed to completion. The reduction is strongly temperature-dependent. At about 60°C the yield jumps sharply from about 5% to about 75% then rapidly levels off. Unlike the metallic platinum and palladium catalysts, which rapidly lose their activity, the palladium sulfide surface does not become poisoned and may be used many times without regeneration.

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USSR

UDC 542.941.546.791.6'161

KIREYEVA, G. N., SAVEL'YEVA, V. I., and GROMOV, B. V.

"Photochemical Reduction of Uranyl Fluoride With Ethanol"

Leningrad, Radiokhimiya, Vol 13, No 6, 1971, pp 906-909

Abstract: Reduction of uranyl ion with organic reducing agents was studied in fluoride medium under the influence of UV light. It was determined that out of a series of organic compounds the isopropyl alcohol and ethanol were the best reducing agents, the acetaldehyde and acetic acid -- the worst. The rate of photochemical reduction of uranyl ion depends on the quantity of organic reducing agent; for one mole of uranyl fluoride a 10 fold excess of isopropanol is required, 15 fold excess of ethanol, and 25 fold excess of methanol. The temperature has an inverse effect -- the higher the temperature the lower the quantity of reduced uranium. The reaction has a first order equation in respect to the uranium. The apparent reaction rate constants and energy of activation have been calculated.

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USSR

UDC: 621.384.6.5

ARZUMANOV, A. A., NEMENOV, L. M., ANISIMOV, O. K., BATALIN, S. S.,  
VOLKOV, B. A., GROMOV, D. D., KRAVCHENKO, Ye. T., KRUGLOV, V. G.,  
NIGMATOV, M. Kh., POPOV, Yu. S., PROKOV'YEV, S. I., and RYBIN, S. N.

"Isochronic Cyclotron With Controllable Ion Energy"

Alma-Ata, Izvestiya AN KazSSR--Teriya Fiziko-matematicheskaya, No 4,  
1973, pp 6-15

Abstract: A discussion of the isochronic cyclotron with controllable ion energy built around the U-150-2 accelerator installed in the Institute for Nuclear Physics of the Kazakh SSR Academy of Sciences in 1965 is given. Calculations of the fundamental parameters made with an electronic computer are presented, together with the results of a theoretical analysis, a large part of which was based on approximation methods. These results were verified by a numerical method. The description is given of a program developed for investigating and modeling the magnetic field on a mock-up with a scale of 1:3. An outline drawing of the magnetic arrangement is given, along with curves of the magnetic field. The current correction for the magnetic field is explained, with an illustrative photograph of the correction winding. Also discussed are the

1/2

USSR

UDC: 631.384.6.5 8

ARZUMANOV, A. A., et al, Izvestiya AN KazSSR--Teriya Fiziko-  
matematicheskaya, No 4, 1973, pp 6-15

high-frequency system and the slit-type ion source, the ions entering the accelerator chamber radially. Curves for the change in beam intensity for accelerated alpha particles are plotted as a function of the accelerator radius. A photograph of the area of installation, showing a beam of protons in air with an energy of 30 Mev, is reproduced together with a photograph of the equipment itself.

2/2

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USSR

UDC 669.295:669-157.97

KRYUCHKOVA, A. I., and GROMOV, G. A.

"Aging of VT9 Titanium Alloy"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 11, 1972,  
p 77

Abstract: A study was made of the effect of long-term aging (500 hrs) at 450°C and 500°C on the properties of VT9 titanium alloy (6.9% Al, 3.04% Mo, 1.65% Zr, 0.28% Si, 0.11% Fe, 0.085% C, 0.006% H, 0.05% N). Before aging, all billets were subjected to heat treatment: 950°C for 1 hr, air cooling, 530°C for 6 hrs, and air cooling. The billets and prepared specimens were heated in electric retort furnaces in air. Test data of mechanical properties, fatigue strength, and the resistance to repeated static tension are presented. After aging at 450°C and 500°C, the VT9 alloy showed a small increase (1-4 kg/mm<sup>2</sup>) in strength. The plasticity decreased during aging. Aging at 500°C decreased the impact strength of prepared specimens by a factor of two. The strength of aged, notched specimens decreased by 14-24 kg/mm<sup>2</sup>, depending on the temperature. One table.

1/1

Titanium

USSR

UDC 669.295:620.172

TSEYTLIN, V. I., GROMOV, G. A., and KRYUCHKOVA, A. N.

"Low-Cycle Fatigue of Titanium Alloys"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 4, 1972, pp 57-58

Abstract: This paper deals with the effect of strength, temperature, stress concentration, and surface hardening on the low-cycle fatigue of titanium alloys. The sensitivity of VT8 and VT9 titanium alloys to repeated stresses is shown to increase with the strength of these alloys for both smooth and notched specimens. The sensitivity factor to repeated stress remains unaffected by increasing the test temperatures. Surface hardening is shown to be an effective means of extending the service life of titanium alloys during low-cycle fatigue tests. This is attributed to the relaxation of residual stresses at test stress values exceeding the yield point of the material. (4 tables)

1/1

USSR

UDC 669.18:621.746

SOBKIN, S. I., NCSOV, V. A., ISUPOV, V. F., BREUS, V. M., CHEPURNOVA,  
A. A., GROMOV, G. P., and ISMANOVA, T. A.

"Certain Factors Influencing the Increase in Density and Purity of Boiler  
Steel Ingots"

Proizvodstvo Chernykh Metallov (Production of Ferrous Metals--- Collection  
of Works), no 75, Metallurgiya Press, 1970, pp 240-251

Translation: A study is made of four ingots melted by the scrap process,  
the scrap ore process, and from a high-carbon semi-finished product of  
100% cast iron with synthetic slag treatment of the semi-finished product  
and steel, cast under a layer of slag with heating of the riser of the  
ingot by lunkerite or an exothermic mixture and lunkerite in combination  
with heat insulation of the mold with asbestos.

The influence of these factors on the segregation of chemical ele-  
ments, gas content, content of nonmetallic inclusions, density and dendritic  
structure of the ingot is established. 3 figures; 2 biblio. refs.

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USSR

UDC: 539.163.546.657

BUFTSEV, V. S., VYLOV, Ts., GROMOV, K. Ya., KALINNIKOV, V. G., Joint Institute of Nuclear Research

"Investigation of the Decay of Neodymium and Praseodymium Nuclides With Mass Number  $A = 136$ "

Moscow, Izvestiya Akademii Nauk SSSR: Seriya Fizicheskaya, Vol 37, No 8, Aug 73, pp 1581-1589

Abstract: The paper investigates the chain decay  $^{136}\text{Nd} \rightarrow ^{136}\text{Pr} \rightarrow ^{136}\text{Ce}$ . About 100 new  $\gamma$ -transitions are observed in the decay of  $^{136}\text{Nd}$  and  $^{136}\text{Pr}$ . Types of multipole orders are determined for a number of these transitions. A decay scheme is proposed for the first time for  $^{136}\text{Nd}$  ( $55.0 \pm 1.5$  min), and a considerable augmentation is made to the decay scheme of  $^{136}\text{Pr}$  ( $12.9 \pm 0.4$  min). The authors thank V. P. Afanas'yev, I. I. Gromova, N. A. Lebedev, E. Kherrmann, Kh Tyrroff, A. A. Aleksandrov, V. M. Mosyazh, Ya. Polakhova, V. Bonova, and M. Nenova for considerable interest in the work.

1/1

USSR

UDC: None/

ALEKSANDROV, V. S., BUTTSEV, V. S., VYLOV, Ts., GROMOV, E. Ya.,  
and KALINNIKOV, V. G.

"Determining the Energy of the  $^{134}\text{Ce} \xrightarrow{\epsilon} ^{134}\text{La}$  and  $^{160}\text{Er} \xrightarrow{\epsilon} ^{160}\text{Ho}$   
Decays"

Moscow, Izvestiya Akademii Nauk SSSR---Seriya Fizicheskaya, No 5,  
1973, pp 948-952

Abstract: Using experimental and theoretical data from earlier papers, the authors of the present article determine the energy arising from the decay of  $^{134}\text{Ce} \xrightarrow{\epsilon} ^{134}\text{La}$  and  $^{160}\text{Er} \xrightarrow{\epsilon} ^{160}\text{Ho}$ . The method of the determination is illustrated by the example of the latter decay, where the formula for the number of x-ray quanta of the K series for Ho per 100 decays of  $^{160}\text{Er}$  during a specified time interval and the formula for the number of x-ray quanta of the K series for Dy per 100  $\delta$  decays of  $^{160}\text{Ho}$  over the same time interval, are used. The experiments through which the data were obtained are briefly described, and diagrams illustrating the systems of the decays are given. Plots of the x-ray radiation spectra for both  
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(1)  
ALEKSANDROV, V. S., et al., Izvestiya Akademii Nauk SSSR--Seriya Fizicheskaya,  
No 5, 1973, pp 948-952

types of decay are also given. The authors thank N. A. Lebedev,  
V. P. Afanas'yev and I. I. Gromov for preparing the specimens used in the  
experiments, and Ye. P. Grigor'yev for his interest in the work. It is noted  
that the method here given is practically unique for this type of decay chain.

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USSR

UDC: 539.163.546.662

GAVRILYUK, V. I., GROMOV, K. YA., KLYUCHNIKOV, A. A., KUPRYASHKIN, V. T., LATYSHEV, G. D., MAKOVETSKIY, YU. V., and FEOKTISTOV, A. I.

"Studying the Internal Conversion Electron Spectrum of  $^{146}\text{Gd}$ "

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 37, No 9, 1973, pp 1839-1845

Abstract: The authors study the individual sections of the internal conversion electron spectrum of  $^{146}\text{Gd}$  with the aid of a  $\sqrt{2}$  magnetic beta-spectrometer with high discrimination. This involved three problems: 1. More accurate measurement of conversion line intensity on the L-subshells of atoms for gamma-114.67, gamma-115.52, and gamma-154.58 than has been done previously in order to determine more precisely the E2-component admixture in these M1-transitions. 2. Study the possible direct transitions  $K260.19$ ,  $2^- \rightarrow 4^-$  and  $K269.28$ ,  $1^- \rightarrow 3^-$  according to the decay scheme. 3. Detect the  $K421$  and  $K576$  transitions. The results show that the calculated spectrum was more compressed than the experimental. Further study of the levels of  $^{146}\text{Eu}$  will show what is the real order of the levels.

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USSR

UDC: 539.163.546.656

BUTTSEV, V. S., GROMOV, K. Ya., and KALINNIKOV, V. G.

"Quasi-Proton Excitation States in the Magic  $^{141}\text{Pr}$  Nucleus"

Moscow, Izvestiya Akademii Nauk SSSR--Seriya Fizicheskaya, No 5, 1973, pp 1024-1034

Abstract: There has been a great deal of interest in the characteristics of magic nuclei in which  $N = 82$  and  $Z > 50$  as a result of attempts to describe the characteristics of lower states in this nuclear area in the quasi-particle approximation for protons beyond the filled core. This paper gives the results of exhaustive research into the excitation quasi-neutron states in the  $^{141}\text{Pr}$  nucleus, and the gamma radiation spectra, conversion electrons, and gamma-gamma coincidences of  $^{141}\text{Nd}$ . This last isotope was obtained through the fission of Gd by fast protons in a two-hour irradiation on the OIYaI (Joint Institute of Nuclear Research) synchrocyclotron. A table of information on the gamma transitions of  $^{141}\text{Pr}$  is given together with diagrams illustrating the decay of  $^{141}\text{Nd}$  and the excitation spectra of  $^{141}\text{Pr}$ . The authors thank V. P. Afanas'yev, I. I. Gromova, N. A. Lebedev, Ts. Vylov, the measurement center team of the Laboratory of Nuclear Problems in the OIYaI, the

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USSR

BUTSEV, V. S., et al., Izvestiya Akademii Nauk SSSR--Seriya Fizicheskaya,  
No 5, 1973, pp 1024-1034

operators of the SDS-1604A computer, graduate student N. A. Tikhonov of the  
Leningrad State University, LSU students A. Aleksandrov and V. Mosyazh, as  
well as Ya. Polakhova, V. Bonova, and M. Nenova for their assistance with the  
experiments.

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USSR

UDC: 539.163.546.663

VYLOV, Ts., GROMOV, K. Ya., GROMOVA, I. I., ISKHAKOV, G. I., KUZNETSOV, V. V., KUZNETSOVA, M. Ya., POTEPA, A. V., FOMINYKH, M. I.

"Investigation of the Decay of  $^{148}\text{Tb}$  and  $^{150}\text{Tb}$ . Part II.  $\gamma\gamma$ -Coincidence. Decay Schemes of  $^{148}\text{Tb}$  and  $^{150}\text{Tb}$ "

Moscow, Izvestiya Akademii Nauk SSSR: Seriya Fizicheskaya, Vol 37, No 1, Jan 73, pp 48-52

Abstract: The paper presents studies of  $\gamma\gamma$ -coincidence spectra of terbium isotopes  $^{148}\text{Tb}$  and  $^{150}\text{Tb}$  with their decay schemes and a comparison of the analogous excited states of  $^{148}\text{Gd}$  and  $^{150}\text{Gd}$  nuclei and the neighboring nuclei of samarium and neodymium. If it is assumed that the odd 65-th proton and 83-d (85-th) neutron in the nuclei of  $^{148}\text{Tb}$  and  $^{150}\text{Tb}$  are on shells  $d_{3/2}$  and  $f_{7/2}$  respectively, then according to the shell model the ground state of  $^{150}\text{Tb}$  has the configuration  $\{p(d_{3/2})^1 n(f_{7/2})^3\}$ , while that of  $^{148}\text{Tb}$  is  $\{p(d_{3/2})^1 n(f_{7/2})^1\}$ . These configurations allow values of the  $I^\pi$ -ground states of these isotopes of  $5^-$ ,  $4^-$ ,  $3^-$ , and  $2^-$ . From the decay schemes of these nuclei and the values of  $\log ft$ , it may be concluded that the spin and parity of the ground states of these isotopes must be  $2^-$ .

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1/2 021 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--NEW ISOTOPES PRIME 176 OS AND PRIME 177 OS AND INFORMATION ON THE  
DECAY OF ISOTOPES PRIME 177-180 RE AND PRIME 178-180 OS AND ON THE  
AUTHOR--(02)--GROMOV, K.YA., ARLT, R.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, IZVESTIYA AKADEMII NAUK SSSR: SERIYA FIZICHESKAYA; APRIL,  
1970; PP. 702-12  
DATE PUBLISHED-----70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--OSMIUM ISOTOPE, RHENIUM ISOTOPE, GOLD, PROTON, RADIOACTIVE  
DECAY, HALF LIFE, TUNGSTEN, TANTALUM, NUCLEAR ISOBAR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3004/1403

STEP NO--UR/0048/70/000/000/0702/0712

CIRC ACCESSION NO--AP0131811

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 021

CIRC ACCESSION NO--AP0131811

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ISOTOPES OF OSMIUM WERE OBTAINED BY IRRADIATING METALIC GOLD AND MERCURIC OXIDE IN AN EXTERNAL BEAM OF PROTONS WITH AN ENERGY OF 660 MEV OF THE SYNCHROCYCLOTRON OF THE JOINT INSTITUTE FOR NUCLEAR RESEARCH; RHENIUM ISOTOPES WERE OBTAINED AS DAUGHTER ISOBARS OF OSMIUM. THE HALF LIVES OF THE LIGHT ISOTOPES OF OSMIUM: PRIME 176 OS (3.0 MIN), PRIME 177 OS (3.5 MIN), PRIME 178 OS (6.0 MIN), PRIME 179 OS (7.3 MIN), PRIME 180 OS (22.0 MIN), AND PRIME 181 OS (11.0 AND 2.7 MIN), WERE DETERMINED. THE NEW ISOTOPES PRIME 176 OS AND PRIME 177 OS WERE IDENTIFIED ON THE BASIS OF A GENETIC BOND WITH DAUGHTER ISOBARS OF TUNGSTEN AND TANTALUM. A RHENIUM DECAY SCHEME IS SUGGESTED WHICH IS BASED ON DATA OBTAINED FROM THIS WORK ON GAMMA RADIATION OF PRIME 179 RE AND ON WELL KNOWN DATA ON CONVERSION ELECTRONS. FACILITY: JOINT INSTITUTE FOR NUCLEAR RESEARCH.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--GAMMA RAY SPECTRUM OF THE CERIUM 134 YIELDS LANTHANUM 134 YIELDS  
BARIUM 134 CHAIN -U-  
AUTHOR--(04)--ABDURAZAKOV, A.A., GROMOV, K.YA., ISLAMOV, T.A., SIBIROV, B.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(4), 734-9  
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GAMMA RAY, SPECTRUM, CERIUM ISOTOPE, LANTHANUM ISOTOPE, BARIUM  
ISOTOPE, IRRADIATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3008/2031

STEP NO--UR/0048/70/034/004/0734/0739

CIRC ACCESSION NO--AP013885

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139885

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRIME134 CE YIELDS PRIME134 LA YIELDS PRIME134 BA DECAY CHAIN WAS STUDIED BY 9 GROUPS STARTING IN 1951. RECENTLY, RADIOACTIVE CE WAS OBTAINED IN THE IRRADN. OF GD FOIL BY 660 MEV P FROM THE DUBNA SYNCHROCYCLOTRON, AND WAS SEPD. BY CHROMATOG. THE GAMMA RAY SPECTRUM WAS STUDIED BY USING A GE(LI) SPECTROMETER. THE RESULTS ARE COMPARED WITH THOSE OBTAINED RECENTLY BY DZHELEPOV, ET AL. (1969) AND ABDOUL-MALEK AND HAUMANN (1968). A SCHEME OF LEVELS OF PRIME134 BA IS PROPOSED. FACILITY: OB'EDIN, INST. YAD. ISSLED., DUBNA, USSR.

UNCLASSIFIED

USSR

GROMOV, K. Ya.; ARL'IT, R.; et al (Joint Institute for Nuclear Research)

"New Isotopes  $^{176}\text{Os}$  and  $^{177}\text{Os}$  and Information on the Decay of Isotopes  $^{177-180}\text{Re}$  and  $^{178-180}\text{Os}$  and on the Decay Scheme of  $^{179}\text{Re}$ "

Moscow, Izvestiya Akademii Nauk SSSR: Seriya Fizicheskaya; April, 1970; pp 702-12

ABSTRACT: Isotopes of osmium were obtained by irradiating metallic gold and mercuric oxide in an external beam of protons with an energy of 660 Mev of the synchrocyclotron of the Joint Institute for Nuclear Research; rhenium isotopes were obtained as daughter isobars of osmium.

The half-lives of the light isotopes of osmium:  $^{176}\text{Os}$  (3.0 min),  $^{177}\text{Os}$  (3.5 min),  $^{178}\text{Os}$  (6.0 min),  $^{179}\text{Os}$  (7.3 min),  $^{180}\text{Os}$  (22.0 min), and  $^{181}\text{Os}$  (110 and 2.7 min), were determined.

The new isotopes  $^{176}\text{Os}$  and  $^{177}\text{Os}$  were identified on the basis of a genetic bond with daughter isobars of tungsten and tantalum.

A rhenium decay scheme is suggested which is based on data obtained from this work on gamma radiation of  $^{179}\text{Re}$  and on well-known data on conversion electrons.

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Luminescence

USSR

UDC 661.14

GROMOV, L. A., LUKONENKO, V. D., TROFIMOV, V. A., Leningrad Technological  
Institute imeni Lensovet

"Physico-Chemical Investigation of the Process of Formation of ZnS(Cu)-  
Phosphors; Report I: Activation of Zinc Sulfide by Metallic Copper"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 1, Jan 1970, pp 122-126

Translation: It was established that ZnS(Cu)-phosphors with blue and green  
luminescence can be obtained by calcination of deoxidized zinc sulfide with  
metallic copper in the absence of oxygen, sodium chloride and other substances  
which contribute to the appearance of luminescence centers. The intensity of  
luminescence of ZnS(Cu)-phosphors, produced by the activation of deoxidized  
zinc sulfide with metallic copper, is analogous to the intensity of these phosphors  
produced in the presence, for example, of potassium chloride. Introduction  
of free zinc into a charge, which contains deoxidized zinc sulfide  
and metallic copper, leads to suppression of green as well as of blue luminescence,  
and additions of free sulfur -- to the appearance of the centers of  
red heat.

1/1



USSR

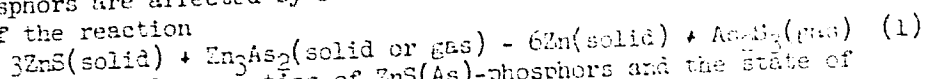
UDC: 535.37

GROMOV, L.A., LUKHNEVICH, V.D., TROFIMOV, V.A., Leningrad Technological Institute  
imeni Lensovet, Leningrad, Ministry of Higher and Secondary Specialized Education  
RSFSR

"Physicochemical Investigation of the Formation Process of ZnS(As)-Phosphors"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 3, Mar 70, pp 621-626

Abstract: Research indicates that the centers of orange luminescence in ZnS(As)-phosphors are formed during physicochemical conversion of the ZnS-As<sub>2</sub> system, the chief stages being chemical interaction of the components and diffusion of arsenic (in the form of negative ions) into the zinc sulfide lattice. The validity of this interpretation can be checked by studying the way in which optical properties of ZnS(As)-phosphors are affected by factors which determine the state of redox equilibrium of the reaction



The authors studied the optical properties of ZnS(As)-phosphors and the state of equilibrium of reaction (1) as functions of the concentration of zinc arsenide in the charge, the volume of the quartz ampules, and the introduction of free zinc, sulfur, and arsenic sulfide into the charge. The state of equilibrium of reaction (1) was determined from data on the determination of free zinc. In addition, chemical interaction was studied in mixtures of zinc arsenide with arsenic sulfide and with sulfur. It is shown that the intensity of the orange band in ZnS(As)-phosphors depends on the state of the ZnS-Zn<sub>3</sub>As<sub>2</sub> system. The authors are sincerely grateful for the work and constructive criticism offered.

1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--PHYSICAL CHEMICAL STUDY OF THE FORMATION OF ZNS(AS) PHOSPHORS -U-

AUTHOR-(03)-GREMOV, L.A., LUKNENKO, V.D., TROFIMOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 621-6

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CRYSTAL PHOSPHOR, CHEMICAL REACTION, ZINC SULFIDE, ARSENIDE,  
ARSENIC SULFIDE, THERMOLUMINESCENCE, RADIATION INTENSITY, LUMINESCENCE  
QUENCHING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--2000/1137

STEP NO--UR/0076/70/044/003/0621/0626

CIRC ACCESSION NO--AP0124792

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70  
CIRC ACCESSION NO--AP0124792  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHANGE IN THE OPTICAL  
PROPERTIES OF ZNS(AS) PHOSPHORS IN THE REACTION ZNS PLUS ZN SUB3  
NEGATIVE AS SUB2 YIELDS 6ZN PLUS AS SUB2 S SUB3 UNDER VARIOUS CONDITIONS  
WAS STUDIED. MIXTS. OF ZNS AND ZN SUB3 AS SUB2 WERE HEATED 1 HR AT  
1100DEGREES IN AN EVACUATED QUARTX AMPUL. THE CONC. OF ZN SUB3 AS SUB2  
VARIED FROM 5 TIMES 10 PRIME NEGATIVE5 TO 3 TIMES 10 PRIME NEGATIVE3 G-G  
ZNS, AND THE VOL. OF THE AMPUL, VARIED FROM 3.5 TO 50 ML. THE INTENSITY  
OF THE ORANGE LUMINESCENCE FIRST INCREASED, THEN DECREASED WITH  
INCREASING CONC. OF ZN SUB3 AS SUB2 IN THE REACTION MIXT. THE CONC.  
OF ZN SUB3 AS SUB2 FOR OPTIMUM INTENSITY DEPENDED ON THE VOL. OF THE  
AMPUL AND INCREASED WITH AMPUL VOL. WHEN THE CONC. OF ZN SUB3 AS SUB2  
WAS CONST., THE INTENSITY OF THE ORANGE LUMINESCENCE DECREASED WITH  
INCREASING AMPUL VOL. THE AMT. OF FREE ZN INCREASED WITH INCREASED  
AMPUL VOL. ADDN. OF ZN TO THE REACTION MIXT. LED TO INCREASED INTENSITY  
OF THE ORANGE LUMINESCENCE. THE INTENSITY WAS DECREASED BY ADDN. OF AS  
SUB2 S SUB3. THIS WAS EXPLAINED BY REACTION OF AS SUB2 S SUB3 WITH ZN  
SUB3 AS SUB2 TO GIVE ZNS AND FREE AS. THE INTENSITY WAS ALSO DEPRESSED  
BY THE ADDN. OF S. FACILITY: LENINGRAD. TEKHNOL. INST. IM.  
LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

Acc. Nr.: AP0029105

Ref. Code: UR 0246

PRIMARY SOURCE: Zhurnal Nevropatologii i Psikhatrii, 1970,  
Vol 70, Nr 1, pp 122-125

THE MECHANISM OF ACTION AND THERAPEUTIC EFFECT  
OF ELENIUM AND DUXEN IN DIENCEPHALIC EPILEPSY

Gromov, S. A.; Starykh, N. T.

A pharmacological study of Elenium displayed that this preparation does not possess a peripheral and central adrenoblocking action, as well as a M and N cholinergic activity. In other words, it does not affect the vegetative nervous system. In treating 117 patients with diencephalic epilepsy by Elenium and Duxen a high therapeutical effectivity was definitely marked. A stable improvement was attained in 83—85% of the cases. Satisfactory results were seen in 7—9% of the cases. In 6—10% there were no changes. A suspension in the use of these drugs brought on a renewal of diencephalic attacks. The authors presume that the therapeutical effect of these preparation is achieved by a possible block of the pathological stimuli on the level of the thalamus, limbic system and deep areas of the temporal lobe.

REEL/FRAME

19680616